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Seven preschool blind children participated in a 6-week program for developing independence in these areas: movement in space, self help skills, effective use of residual vision, socialization, and body image. Children were provided with a variety of activities, were encouraged to do things for themselves, and were accompanied by an aide who helped them express themselves and who assisted in carrying out the teachers' programs. Parent education meetings were held, and caseworkers provided counseling. Case studies of the children indicate improvements in self help and other skills; each child was evaluated on three scales for blind children which indicated an increased number of items able to be completed for most of the children. Reports of professional visitors were favorable. Information on the staff, cost of the program, and dissemination is provided; the three evaluation scales, as well as behavioral observations, are included. (RJ)

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Allegheny County Schools

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EXCEPTIONAL CHILDREN PROGRAM

A DEMONSTRATION PROJECT ON DEVELOPING INDEPENDENCE IN PRESCHOOL VISUALLY HANDICAPPED CHILDREN

PROJECT NO. 48-0935-02-012-02

MARY W. MOORE, PROJECT DIRECTOR

August, 1969

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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1 INTRODUCTION AND OBJECTIVES

The inability of severely visually impaired children to move freely in space deprive them of many learning experiences available to sighted children in early years. Multi-handicapped visually impaired children face this problem exaggerated by the limitations imposed upon them by the presence of emotional, physical and mental impairment. Without some basic training and activities directed to the development of free body movement, communication, and social competence, these children are seriously deprived of extremely important early life experiences which are fundamental to developing a healthy body image, a sense of personal security and a necessary perceptual motor background for adapting to the world around them.

A Demonstration Project on Developing Independence in Pre-School Viaually Handicapped Children was conducted by the Allegheny County Schools Exceptional Children's Program for six weeks during the summer of 1969, with funds allocated through the Commonwealth of Pennsylvania under Title VI of the Elementary and Secondary Education Act, as a pilot project to demonstrate the efficacy of formal instruction in overcoming the effects of early deprivation.

The Pittsburgh Branch of the Pennsylvania Association for the Blind, Inc. had been supplying casework services to the seven children selected for this project. The following criteria were used:

(1) age range of child was 3 through 5 years of age.

(2) child was a resident of Allegheny County and was accessible in terms of transportation time to the project center.

(3) child satisfied the criteria of blindness (less than 20/200 in the better eye with correction).

(4) child was able to walk independently

(5) child had no previous experience in a special education program

(6) parents were cooperative and agreed to participate in the program

(7) staff judgment that child would benefit from inclusion in the program

The seven children selected differed from each other in severity and type of concomitant disabilities and previous experiences. Individualized instruction was prescribed based on each child's specific needs, with the general objectives of increasing performance in skills relating to:

1. movement in space, including:
    a. using tactual cues
    b. using doors and windows
    c. avoiding hazards
    d. localizing auditory cues
    e. identifying auditory cues
    f. riding tricycle or skates
    g. using right and left
    h. familiarization techniques
    i. walking
    j. understanding turns and reversing routes
    k. using trailing techniques
    l. walking up and down steps
    m. hopping and skipping
    n. running and jumping
    o. climbing

2. self-help, eating, including:
    a. seating self
    b. drinking from cup or glass
    c. eating with spoon, fork, knife

3. self-help, dressing, including:
    a. putting on clothing
    b. removing clothing
    c. buttoning and unbuttoning
    d. hanging up clothes
    e. brushing hair
    f. tying bowknots

4. effective use of residual vision

5. socialization, including:
    a. using names of familiar objects
    b. initiating own play
    c. adjusting to group situations
    d. washing and drying face and hands
    e. listening to music, stories
    f. taking part in parallel play
    g. toileting
    h. using telephone
    i. talking in sentences

6. body image awareness, including:
    a. body planes
    b. body parts
    c. body movements
    d. laterality
    e. directionality

2 TECHNIQUES AND SERVICES

Prior to the six weeks preschool period, the director of the program assessed the motor and social behavior of the children in their home settings, and a preliminary psycho-educational prescription was outlined for each child. A Social Maturity Scale for Blind Preschool Children (Maxfield-Buchholz, 1953) was used as the evaluating tool at this time. This scale does not call for cooperation by the child but is a record obtained from an adult of the child's actual consistent performance rather than his ability to perform certain social tasks. During the first week of the program each child was evaluated on A Scale of Orientation and Mobility Skills of Young Blind Children (Lord, 1967) and Body Image of Blind Children Screening Test (Cratty, 1968). These three scales were guides to the specific tasks to be used for instruction. Those specific tasks which each individual child was unable to perform were recorded, and lesson plans were made for their instruction.

There was a wider range of development among the seven children than might have been projected if only their chronological ages had been considered. Some of the children displayed competencies in social tasks expected for their age level and with these children concentrated instruction on orientation, mobility and body image was indicated. On the other hand, several children were so retarded in their social development that it would have been unfeasible to consider mobility or body image. Four of the seven children were completely non-verbal. In two areas, all the children displayed deficiency: the ability to utilize their residual vision effectively, and the ability to purposefully employ their hands.

Certain general principles prevailed. Each child was provided with as much stimulation as possible, not in terms of actions done "to" the child, but in terms of providing the child with opportunities to do "for" himself. The teachers and aides were physically active with the children at all times and encouraged them to explore as much as possible. Water, sand, gravel, grass, mud and other materials were available to encourage the child to tolerate tactual stimulation of all sorts. Chairs were used only at lunch time. During the classes, teachers and aides sat on the floor or outdoors on the ground with the children. They used see-saws, slides and monkey bars, and rolled on mats along with the children. Except for lunch, snacks and toileting, no child was ever restricted physically. Where he roamed an aide roamed, constantly helping him label and differentiate objects and encouraging him to express himself verbally when possible. Three large rooms were used as well as outdoor areas surrounding the school. The teachers offered the formal instruction to the children and each aide was assigned one child for the day to work with as a follow-up to the instruction. At daily staff meetings in the morning the specific activities for the day were outlined, and a daily report dictated on a portable Dictaphone machine was made by each staff member. In this fashion, each child's individual needs could be met and changes in approach could be made quickly if indicated. No single method of instruction proved effective for all the children, but was varied according to the response of the child.

Child 1

M. was a pleasant three year old with retarded social development. His speech consisted of a few single baby words such as "hi" and "bye-bye". He had a history of much recent surgery and hospitalization and was subject

to screaming temper tantrums if restricted in any fashion. He responded to practically no verbal command. Although his ophthalmological report indicated only light perception, he had a good deal of vision in one eye and with glasses, he functioned well as a sighted child.

M. had cerebral palsy affecting his right side, and limped badly. He did not use his right hand at all when he entered the program.

M. had lived with an older, intelligent and cooperative foster parent since birth who was, however, unable to discipline him in a realistic fashion. Recently she had had much trouble with his screaming tantrums and erratic sleep pattern, and expressed serious concerns about her ability to continue to care for him. She had been told by a psychologist that M. was "slow" and "would need help all his life". The foster mother was obviously very concerned about him, proud of any accomplishments, and demanded very little of him.

During the first week of the program M. spent his time actively exploring the classrooms. He engaged in no purposeful activity and when attempts were made to require him to sit down, either for instruction or for eating, he threw himself on the floor and screamed. In the lunchroom he refused to eat or sit in a chair and wandered around the other children, sometimes snatching food from their trays. The aide spent most of her time outdoors with him, playing baby type hide and seek games, using the sliding board, rolling in the grass and playing in the sand. He discovered the piano in one of the rooms and spent time playing on it. It was discovered that he could, with this motivation, use his right hand and he was encouraged to do so.

The first day of the second week, M. was scheduled for simple manipulative tasks in order to lenthen his attention span. The first

day this consisted of short, less than five minutes, intervals encouraging him to put four small toys into a box, then a bag, and removing them again. The second day, M. was introduced to a simple form board puzzle. The teacher used bits of sweet dry cereal to reward him for sitting at the puzzle and attempting to assemble it, but it was soon discovered that the task was motivating in itself and no other external rewards were used but verbal approval. He was able by the third day to fit the simple geometric shapes into the board, using his left hand only. On this day he was introduced to a puzzle having five different animal shapes in which it was necessary to turn and manipulate the pieces to fit into the holes. He quickly learned to match the shape with the hole visually, but was unable with one hand to manipulate the pieces. He was instructed how to use his right hand as a helping hand, and was then successful. Sessions were kept short, never more than ten minutes, and single tasks were presented in order that he could accomplish a complete task before leaving.

His tantrums became less frequent and more deliberate. He would carefully place himself on the floor before he began to scream, his teacher would take this opportunity to work with him calmly on body image, saying "Lift up your leg. Now lift up your arm. Where is your nose, etc." This controlled the screaming which accompanied the tantrum. Before lunch and juice M. was encouraged to wash and dry his own hands. He was helped into a sweater when he went outdoors, but was required to remove it himself when he came in. When the aide played with him with a toy, she would use this to teach him head, arm, leg, ear, nose, mouth, front and back, by having him place the toy first on his own body and then on hers.

M. was still unable to tolerate the restriction of sitting at the lunch table with the other children, so for the third week he was

removed to a room alone with an aide for lunch. At the end of this week he was able to sit at the table with other children and eat and even indulge in some small amount of socialization. He needed to be removed from the room immediately upon completion of the meal. He fed himself well with a spoon in his left hand and no effort was made to teach him the use of a fork. From the fourth week, Mark was a part of the group for lunch, juice and rhythm band activities.

M.'s attention span became longer. From the fourth week on, activities were provided which required him to manipulate with his right hand and to utilize his vision for eye hand coordination. He was able to successfully string beads, assemble puzzles involving several interlocking pieces, assemble nuts and bolts, recognize parts of animals such as legs, eyes, mouth, etc., and recognize and verbalize parts of pictures.

It was impossible to test M. formally on the chosen scales at the end of the program because he would still not perform on command. The evaluators made a descriptive behavioral assessment of his progress.

Child 2

K. was a pretty little girl with blond curly hair. She was tall for her age, but not extremely thin. Her eyes were sunken with dark rings around them.

The first day that K. came to school, she was carried in by her foster mother and placed on the floor. She laid down and cried and whined. When the teacher attempted to speak to her, making her sit up, she made gutteral, animal-like noises and scratched the teacher and made frantic attempts to bite her arms and hands. K. would scream if brought to her feet, but would be contented only if allowed to lay on her back on the floor with her thumb in her mouth and rock her body from side to side. At lunch

time she became uncontrollable. The teacher sat on the floor and held her tight against her own body, and was able to feed the child that way. K. was unable to drink from a cup even with a special training cap. She did not understand the process of getting just so much milk in her mouth and swallowing, but allowed the milk to run down her face continuously. She was not bottle fed, however, so existed on the amount of liquid she was able to get in this fashion.

The day was spent with the teacher sitting beside her and talking quietly to her, calling her by name repeatedly, and handling her as little as possible. The teacher occasionally tried to interest her in squeaking toys and encouraged her with support to stand and walk whenever possible.

The second day, K. got up by herself for the first time and walked for a few very short periods independently. She could be interested in some sounds and found that if she ran her hands over a grating on the door, this made a pleasurable sound to her. By the third day, it was possible to get her to follow a sound for a few steps. She tolerated physical manipulation and the teacher would touch her feet, head, arms and say, "feet, head, etc." She allowed the teacher to support her under both arms and walk with her. The teacher sat on the floor and repeated over and over her name and finally K. responded with a body motion to this sound. K. sat under a chair and scraped it back and forth on the floor but by the end of the week would sit in a chair to be fed her lunch.

During the second week, K. got up from the floor repeatedly and did some exploring. She was given a long rubber squeak toy in the shape of a clothes pin which would squeak whenever she pushed against it while it was lying on the floor. She laughed and smiled while engaging in this activity, but resisted grasping anything in her hand. A major accomplishment

for the week was when she would grasp a candy stick and put it into her mouth, lick it, remove it and then put it back in again. This was the first she had tolerated anything solid in her mouth, although she did not attempt to bite or chew it. The teacher put some strained food in a dish, put the child's fingers in the food, and then in her mouth, and finally seemed to establish the connection with the child. The teacher then showed K. how to help hold a spoon and guide it into her mouth. Her progress during this week was erratic. Much time was spent simply withdrawing from all relationships and laying and rocking. By the end of the week, however, she would get up and come to her teacher if called. This was the first indication of the child's acknowledging the presence of another person.

At the beginning of the third week it was still impossible to find something that was rewarding to K. She continued to put the candy stick in her mouth and was beginning to explore other things, rhythm band sticks, cups, spoons, with her mouth but she displayed no special interest in the taste of candy. She enjoyed music and an attempt was made to manage her behavior with music, but was unsuccessful. The room that was used as a playroom was, during the school year, used for physically handicapped children and there were metal rails around to aid these children. It was noticed that K. liked to stand with her chin on these rods and feel the vibrations if someone hit the rod. The teacher brought to school an electric vibrator used for home massage. Some very soft marshmallow cookies were used and whenever K. opened her mouth, the teacher put in a little bit of the cookie and immediately turned on the electric vibrator and applied it to the child's chin. This process was originally designed to help her learn to tolerate solid food, and was successful at that. By the end of the program, K. was eating graham crackers, tea cookies, and even apple slices, and at lunch time she was eating semi-solid food such

as that packed in jars for toddlers.

The teacher found that the vibrator could be used as a reward to K. for other behaviors than eating. She was taught to remove her shoes and socks, with help, to throw or push a large beach ball, play patty-cake, and follow sounds across the room. The tactual stimulation with the vibrator continued every day. As the teacher worked with K. on any task, turning on the vibrator and applying it to hands, feet, head and then turning it off until the next response from K. was elicited, she talked to the child constantly in a reassuring but stimulating manner. She was able to use this verbalization, then, as a reward for behavior occurring in other rooms and situations removed from the vibrator.

K. became more alert day by day. She responded to simple commands of "get up" and "let's go". She explored with her hands, with her feet, with her whole body for movement, vibration and noise. She was not content to lay and rock, but within a minute of laying down she was up trying to find something to do. She played with the ball, with blocks, a music box. She tried to cooperate to wash her own hands and she retrieved lost toys when they fell away from her.

The evaluators found K. acknowledging their presence, laughing and playing with them. She came when called and she climbed up in a chair and sat down by herself to play at a table.

Child 3

A was a handsome boy three and a half years old. He was tall for his age, and looked mature. This made it difficult since more was required of him than should be for his chronological age. His medical diagnosis indicated light perception in one eye, but this was so little

that it was difficult to establish if he was avoiding simple hazards with the use of the light perception or object perception. He was born blind and had many blind mannerisms. He wrung his hands before his face, rocked when standing or sitting, and jumped constantly in place.

The first week that A. was in the program, he was unable to tolerate any one touching him or even, for the first few days, anyone speaking to him. At home he had a rocking chair and a rocking horse, and all he would do in school was rock on the rocking horse. This had to be removed on the second day. He kicked, clawed and scratched his teacher if she stood close to him or spoke to him. He was unable to tolerate the presence of other children in the room and was removed to the outdoors where he contentedly played with gravel if left entirely alone. If he was given a toy he threw it wildly over his shoulder and screamed. He rejected all the staff, each of whom took a turn attempting to interact with him.

A tricycle was substituted for the rocking horse. At first A. refused to put his feet on the pedals, but it was found that he responded quietly to the male member of the staff who was able to teach him to pedal the tricycle.

A. could not feed himself and it was found that his hands were very weak. He had difficulty grasping and holding a spoon. He was not permitted to eat anything, except the finger food provided, with his fingers and he was not permitted to ignore his lunch. He was able to pick up a glass, drink, and return the glass to a table. He fussed for the first week for the rocking horse to which he wished to retreat on any occasion when he was being urged to cooperate in a learning situation.

By the second week, A's coordination on the bicycle had improved

until he had to be cautioned not to ride too fast. He would tolerate his teachers and in particular the male teacher for whom he would perform on the mats very willingly. This activity was designed to promote body image. The child was instructed to lie on his back, roll over on his stomach, turn on his side, lie with his back or side to the wall. All of these tasks were to be performed to verbal command, and A. was able to accomplish them. He was still unable to tolerate the confusion of having other children around him and he became very agitated when the noise level rose. It was decided that he could help build up tolerance to noise if he learned to discriminate sounds more effectively. Every day he was taken to a room by himself and was encouraged to listen to, and identify, common household noises and outdoor noises from tapes. He was interested in the tapes, but consistently became agitated at any loud motor noises, such as lawn mower or trains. He was still extremely rebellious and would at times pick up pieces of furniture and throw them as hard as he could across the room if he happened to bump into them. The teacher would take him across the room and make him pick the piece up and put it back. This frequently became a very noisy, traumatic occasion.

The third week, A. was scheduled for activities involving tactual manipulation and identification of objects. He was able to tolerate this type of formal work activity for two or three ten minute periods a day. He was asked to find things on a table among other objects. Simple form puzzles were attempted, but he quickly became uncontrollable when he was urged to manipulate them. He bit the pieces, threw them, knocked over his chair and wildly brushed everything from the table at which he was sitting. This activity was discontinued, and identification of model animals was substituted. He was able to identify five or six of the sounds on the tapes. His parents

delightedly reported that they had been able to successfully take him to a restaurant for dinner one night and he had tolerated the confusion there. He continued to work well with the male teacher and could locate several parts of his body.

During the fourth and fifth weeks, no work on small muscle activities were scheduled. He could not manipulate his hands and it was impossible for the teacher to try to extinguish the tantrum response at the same time she was pressuring for small muscle control. He was feeding himself well with a spoon. Activities involving running, jumping, sliding, see-saws and digging sand were planned. He could run to a sound quite well, and could walk steps independently, climb and jump. He behaved well in the lunchroom and tolerated, if not actively cooperated, the group activity of the rhythm band. He no longer rejected the physical presence of the teachers.

For the evaluators, A. displayed his awareness of body parts and his improved mobility skills. He did not, however, ever accomplish any form puzzles or bead stringing or such small muscle activity. He was verbalizing much more but still in an unintelligible vocabulary. His mobility, orientation and social skills were at a level at which 50% of the standardization sample of blind children of his age used for the scales performed.

Child 4

When T. came to the program the first day, he took anyone's hand and explored the whole school. He had glasses tied to his head and shirt, and made no attempt to remove them. He functioned as a sighted child except for a habit of fixating on light, screwing up his little face as he gazed into them.

The aide encouraged him to investigate all the toys, which he would look at for a moment and then throw down. He sat only for lunch which he ate compulsively. When it became necessary to put a dry diaper on him he began screaming, biting and kicking. He threw himself to the floor so wildly that he bounced his head on the hard cement floor and still continued his performance. It took three persons to control him and put his diaper on again. The same performance was gone through when it was time to go home. These attacks were not always triggered by some attempt at physical confinement, but at various times during the morning, he would suddenly commence screaming and throwing himself down. He could at these times, however, finally be distracted. The first week was spent trying to control his screaming and allowing him complete physical freedom to explore.

During the second week, whenever T. showed any sign of going into a rage, and he always displayed a certain rigidity as a signal, whoever was nearest to him picked him up quickly, held him tight in a baby fashion and rocked him while talking softly and lovingly to him. The aide, while playing with him, encouraged him to put Lincoln Logs in a bucket and blocks in a box, and take them out again. He liked to play in water and by the end of the week he said "wa-da" and "bucky" for water and bucket. His shoes and socks were removed and he splashed in puddles and played in the sand. A record was kept of the time it was possible to keep his attention on one thing, and by the end of the week he could manipulate toys such as rings on a spindle for about eight minutes at one time. An attempt was made to use sweet dry creal as a reward for behavior, but was unsuccessful. T. was so clamorous for food that if he was not given an unlimited supply as soon as he knew there was any available, he simply went into his screaming. He was tolerating the hugging and rocking and would even

seem to look at the person holding him and jabber to her.

During the third week, T. was beginning to relate to the staff. He would show them his accomplishments, and play a little with them. He said a few words: cup, shoe, table, chair. He would now allow himself to be put in the car to be taken home. When it came time to change him, he was laid on the side of the sink on his stomach and water was turned on in the sink. While he played with his hands in the water and was diverted, it was possible to change his diaper. He would tolerate being placed on the toilet and was feeding himself completely and well with a spoon, and attempting to handle a fork.

At the start of the fourth week, transportation arrangements for T. had to be revised and he missed school. The institution reported that he screamed until he became sick. It was difficult to establish the relationship again when he returned. It was possible, using a candy stick as a reward, to get him to work with puzzles and manipulative toys. This worked as a reward because he could just lick it and he was aware that it was still there for him if he did the task. He enjoyed being stimulated with an electric vibrator on his hands and face and for the first time, smiled and laughed a little.

During the fifth week, T. had a brief recurrence of screaming. One time he was picked up and suddenly he relaxed his body against the teacher, put his head on her shoulder, and moaned a little. She took him to a quiet place and sat down and rocked him and he fell asleep. When he awoke in a few minutes he was completely relaxed and tractable, and walked with her to the lunchroom, jabbering a little to himself. The next day, T. was given a simple pull toy designed for a baby just beginning to walk. He spent the entire day pulling the toy around, completely happy.

The evaluators made a descriptive, behavioristic assessment of T. They described him as enjoying two year old activities. The institution reports he is not waking and screaming at night, that he will tolerate being with other children, and that he is relating to the staff members and attempting speech with them.

Child 5

D. was a cooperative, nicely dressed little negro boy who had more visual potential than any of the other children. After one day of shyness and some manifest negativism, he was easily worked with. He very quickly learned to ride a large tricycle and model car and enjoyed this activity. He would cooperate on the other tasks required of him on the promise that he could ride soon if he worked well.

D. did not wear glasses when he first came to the program. He functioned well visually for mobility, but it was soon discovered that he was unable either to focus on small items nor to make any eye-hand manipulations. The social caseworkers began immediately to get glasses for him. He fed himself with a spoon and with this activity, as with any other which required small muscle manipulation, he showed no hand preference. He would pick up the spoon, puzzle piece or tinker toy, with either hand and continue with it. On the first evaluation he showed no concept of right or left and little knowledge of his body parts. His social maturity was inadequate on self-help activities and on verbal activities. While he talked plainly, his vocabulary was limited as was his verbal comprehension.

The first week was spent working with him on buttoning and unbuttoning, washing and drying hands, dressing and undressing. The buttoning

task was very difficult for him. He did not attend visually to the task and was unable to manipulate the button and buttonhole consistently from verbal directions. He was scheduled for activities requiring him to focus on a single section and to gain strength in his hands. D. worked willingly on the mats learning body awareness of front, back, side, right and left hands and legs. When he worked with simple puzzles and peg boards the teacher held his left hand quietly in her hands and consistently encouraged him to use his right hand to work. The aides followed up with this in their play activities, always presenting things to his right hand and attempting to keep his left hand occupied or quiet.

During the second week D. was scheduled for a library period each day. His vocabulary comprehension was extremely limited and he was unable to locate and identify particular items in pictures. For instance, every animal was to him a "dog". Each day he would be read a story and encouraged to look closely at the pictures accompanying the story and discuss them. D. was introduced to crayons for the first time in his life. Some of the beginning worksheets for kindergarten, simple shapes, were tried but it was discovered that it was necessary to guide D. through all the developmental pattern first, scribbling, then straight lines, then circles, etc. At the end of the week D. became irritated with the tasks involving buttoning and small manipulation and a contingency management system was used. He was paid in toy money for doing these tasks, and then was charged in toy money for each time he was allowed to ride the bicycle or the car. This system was continued to the end, and with this system, he also learned to count.

At the beginning of the fourth week, D. received his glasses. His eyes, which had rolled wildly previously, straightened when the glasses

were put on and the child was delighted with the new experience. Two days of any formal training were lost while D. explored everything in the classrooms and outside. He then really became cooperative in working with the teacher. He learned to cut on a straight line, to string beads, to color and to work more complicated puzzles involving animal and vegetable shapes. The teacher borrowed some materials used for visual perceptual training and worked with him. He was able finally to trace circles and other basic shapes using his vision. Since this activity is a two dimensional task, in contrast to puzzles which had a tactual, three dimensional aspect, it requires more careful focussing of the eyes and interpretation of visual messages. D. needs much more activity of this type if he is to develop the visual potential that is available to him.

The thinking of his mother and others for D. had previously been directed toward special education as D. had been thought of as an "almost blind" child. The caseworkers are now attempting to find some kindergarten type situation for next year. The judgment of the summer staff was that, with more visual stimulation of the type already started, D. can attend regular school as a partially sighted child.

Child 6

J. came into the program functioning as a blind retarded child. She used her vision for travel, but she walked on her toes with her hands outstretched. She constantly twirled some favorite object, which she brought with her, before her eye and when this was teken from her, she shook her hands in the air as many totally blind youngsters do. She was able to feed herself, but sat on her feet at the table, sang to herself, wiggled her hands in the air and ignored the food unless helped. Her hands were extremely weak, in fact she could barely control the weight of the

spoon. She used either hand indiscriminately on the spoon and on any other task she attempted. J. was started on intensive training in body image: rolling on the mats and doing basic physical exercises aimed toward strengthening muscles and also teaching left, right discrimination. She was started on the task of learning to button and unbutton. A bright red corduroy vest with large black buttons and buttonholes had been provided. This was designed to give the child practice in buttoning in the position that he would have on his own garment. J. looked in the air and fumbled ineffectively with the vest, being unable even to lay the buttonhole side of the vest over the button side. She did not push the button through the hole even when it was positioned for her. The next day the teacher brought in a box of colored buttons and strips of cloth on which she had made several different sizes of buttonholes. J. was encouraged by the aides to practice pushing buttons through the holes. She tried this tactually but never once attempted to look at the task. She had an aversion to feeling many materials, clay and play-dough, rubber balls, etc. and it was difficult to find something which she would manipulate. She would tolerate wooden puzzles, but would flatten out her hand and randomly slide the piece around, hoping that it would fit into a hole. She was extremely negative and refused to cooperate in many tasks. By the end of the week her eating had improved and she sat at the table nicely and ate a little. She still needed help getting anything on the spoon, but she was quiet. It was obvious from our attempts at working with J. that her field of vision was very limited and that she was usually not attempting to locate the task at hand in this field. Also she had no depth perception, and did not understand the concept involved with a puzzle piece dropping into a hole. The Tactile Aides for the Blind, Inc. makes a wooden practice board which has raised figures

on it. J. worked with this, differentiating figures tactually and then visually. J. seemed to be interested in colors and was successfully labeling them and matching them, so the teacher concentrated on having her match beads, first by color, then by shape. This necessitated her using her vision somewhat. She was also included in the library period with D. and was encouraged to look at pictures with him.

By the third week, J. was successfully doing many tasks involved with body image. She had become more tractable and would work with small tasks for fifteen minutes at a time. She could use a peg board with pegs that were 1/4" in diameter and would match them according to color and insert them in the holes. She went up and down stairs alternating feet and was feeding herself well with a spoon and was attempting to manage a fork at the lunch table. At home she was completely dressing herself.

In the book Increased Visual Behavior in Low Vision Children (Barraga, 1964) is a detailed description of the materials used by Dr. Barraga for her study. These materials, a series of pegs of varying lenghths and diameters, were available from the teachers of the visually handicapped of Allegheny County Schools. Beginning with the fourth week of school, J. was given intensive training every day following the sequence outlined by Dr. Barraga. To help her focus on the material which she was manipulating, the room was darkened and the black pegs were set against a white board and illuminated with a high intensity lamp. J. was successful at these tasks. She also became more successful at coloring and succeeded in unbuttoning her vest by herself. She was relating with the other children. By the fifth week she would listen to a story and discuss it, and she would sit at the table with the whole group of children, eat and socialize with them.

The materials with which she had to work had to be carefully chosen. For instance, perceptual material involving the assembling of flat

pictures in the shapes of fruit was tried. The pictures were large and undetailed and very clear, however, when assembled, the entire picture was too large for her to be able to see it all at one time and the concept of wholeness was lost to her.

At the close of the program, she was dressing herself, eating well, washing her hands and caring for herself at the toilet, and anxious to attend the special class in which she is enrolled in September.

Child 7.

F. was six years old, blind, deaf and possibly cerebral palsied. The first day his parents carried him into the school and he walked a little in the hall. When F. came in contact with any other person he wrapped his arms and legs around the person's body and tried to climb up, clutching for support. If the other person picked him up, F. threw himself backward and upside down. He did this compulsively and repeatedly to his mother, father and teacher. The first lesson for him to learn was that he was not going to be picked up and the whole staff joined to extinguish this behavior.

F. did not tolerate any solid food and for several days did not eat any lunch at school. Since one of the objectives of the summer training was to teach him to eat solid food, the parents were instructed to give him only a minimum of breakfast so that he would be hungry. It had been reported that F. fixated on any light source, so the teacher brought in a small pocket flashlight. She started with a banana. When F. allowed her to put a piece of the banana close to his mouth, he was allowed to look at the light. Later this reward was witheld until F. allowed the banana to be placed into his mouth. Then the reward was withheld until he chewed the banana. At the end of six weeks, F. was picking up a spoon independently and spooning

pieces of banana from a dish into his mouth. He was also tolerating semi-solid foods in his general diet.

F.'s reports indicated total deafness and there was no-one on the staff who was professionally trained in speech and hearing; however, experienced visitors remarked that he did not cry the way a deaf child does. It was possible that some central nervous system damage accounted for his apparent deafness. For this reason, while the light was used as the immediate reward, the teacher paired this with constant talking at a normal or even slightly below normal level. At times it appeared that F. was indeed following verbal commands, but it was not possible to establish this confidently. Consistent hand and body signals were devised and the entire staff learned them. For instance, when he refused to walk and kicked his feet out from under him, a firm hand under his left armpit was a signal to stand up and walk and he recognized and obeyed this signal consistently. He had a habit of biting people, but learned that a tug on his hair meant to stop it and he stopped biting.

The second week, F. was introduced to stairs. His feet were maneuvered for him up one step and then the light was flashed at him. This was continued up each step until he learned to walk up by himself. He was continuing these activities at home without the light and it was becoming clear that competency was becoming rewarding in itself to him. The teacher worked with him with a toy involving rings that slid on and off a spindle. The teacher first handed him a ring and guided his hand to put the ring on the spindle, then flashed the light for him. He learned to pick up the ring and put it on independently. Then he was rewarded for putting on two rings, not just one. This continued until finally he would assemble the whole toy for his reward. He was also introduced to a simple form board puzzle. A bicycle was equipped with stirrups to hold his feet; first, because he

walked with his feet directed at an 180° angle with each other, and second, because he was unable to keep his feet still on the pedals. He learned to guide the bike and enjoyed riding, although he was never strong enough to pedal for himself. He was pulled along by his teacher by a rope tied to the handle bars of the bike.

During the third week, F. learned to bounce and catch a large beach ball, to stack blocks on a table and on the floor, and having mastered the form board, was learning to put together puzzles involving shapes such as tomatoes and celery. He learned to put blocks into a bucket or basket and carry them to another room and stack them.

The fourth week, F.'s parents reported that he was feeding himself most of his meals at home and that at least half of his meal was regular table fare. The teacher began covering the flashlight with colored cellophane paper. When F. put in the tomatoe piece of the puzzle, she would cover the light with red paper before flashing it. When he put in the green celery, she would cover the light with green cellophane. Then gradually the process was reversed so that when the teacher flashed the light red, F. picked up the tomato piece.

At the end of six weeks, F. was operating visually at all tasks. He had gained weight, was sleeping all night, was carrying on all his learned activities at home and was eating full meals of semi-solid food. He was quiet at home, contented to sit down and occupy himself with no adult control. During the last week of school his mother worked with him under the guidance of the teacher, and hopefully will continue his training at home until more formal schooling can be arranged.

Each day the children were grouped in the lunchroom for juice and crackers upon their arrival at school. Lunch was provided at noon and again the children were grouped in the lunchroom. During the first few weeks of the program, while some of the children were still unable to feed themselves or to pick up a cup of juice, drink, and replace the cup on the table, this was an individualistic procedure at several small tables. During the last two weeks, six children were able to be seated around one large table and some socialization was going on between them.

Rhythm band instruments were used. Five children were able to be grouped together for this activity for a short period of time.

For three weeks, a normally sighted child, six years of age, attended the sessions. She took part in the lessons, stories, and play activities of the older children. During the last week, four children with their teachers, made a field trip to the Children's Zoo. Here they were able to see and touch live animals of the same sort as the models which had been used for teaching tactual recognition.

Each child was administered an audiological assessment by the Eye and Ear Hospital in Pittsburgh. Severe otitis was diagnosed for two of the children but no hearing impairment was discovered that had not previously been noted.

An important part of the program was parent education. On one morning each week, the parents met at the school to hear outside resource speakers, to exchange experiences with each other, and to confer with and be instructed by the teachers. The value and success of this aspect was partly indicated by the attendance at these meetings. At the first meeting mothers of the children and two social caseworkers from the Pennsylvania Association for the Blind were present to meet with the director of the program. This meeting demonstrated its importance to those present. For

all five subsequent meetings, six mothers (one child lived in a Child Welfare Institution), three fathers, three caseworkers from the Pennsylvania Association for the Blind, two caseworkers from the Family and Childrens Service, and at one time, two grandmothers were present. Parents frequently spent time on an informal basis working with the teacher and child in order to understand the techniques of teaching.

The educational implications of the visual and motor abilities of the children which the teachers evaluated from records and observation, were interpreted to the parents by the teachers. Suggestions for follow-up training in the homes were made.

The medical social caseworkers from the Pittsburgh Branch of the Pennsylvania Association for the Blind who had established a counselling relationship with the families of the children in the project, worked closely with the staff during the six weeks. The cooperation and acceptance by the parents were largely due to the help provided to them by these caseworkers. They attended all the parent education meetings and interpreted to the parents information presented by the resource persons. They spent two days with the teachers in order that they could learn how to help the mothers continue training at home. The resource persons provided realistic goals for the parents and the caseworkers helped the parents accept these goals and understand the necessity for home follow-up in order for the children to attain them. Immediately following the program the caseworkers began actively working with the parents in their homes. This cooperation between social and educational agencies provided a very necessary broad coverage of services to the parents.

3 NUMBERS AND TYPES OF CHILDREN

The following seven children were included in the project:

Child 1. M., male, caucasian

Birthdate: 7-10-66

Ophthalmological report of 4-69

Diagnosis: Tapeto Retinal Degeneration O.U.
Congenital Retinal Dysplasia O.U.

Vision: Light Perception O.U.

Audiological report of 7-10-69

"Indicated awareness of voice and music at the 20db. level. . .

"His best performance indicates that his hearing is essentially within normal limits and that it is adequate for the development of speech and language skills. There does not appear to be any handicapping reduction in hearing which could interfere with learning."

Developmental History:

M. was a premature abandoned baby who had lived in one foster home since birth. He had a mild cerebral palsy effecting his right side. Surgery and the application of a walking cast to correct an orthopedic defect of the right ankle was performed spring, 1969. He could feed himself solid food, verbalize single words in a baby fashion, was not toilet trained, could not put on nor take off coat or sweater, did nothing upon command. He was an outgoing, pleasant child who enjoyed the company of other children. He did, however, have many screaming tantrums and an erratic sleep pattern.

Child 2. K., female, caucasian.

Birthdate: 3-2-66

Ophthalmological report of 6-9-69

Diagnosis: Retinal Detachment O.D.

Cataract O.D.

Vision: No Light Perception O.S. O.D.

Audiological report of 7-17-69

"Audiological test results indicate that hearing is essentially within normal limits and that hearing is adequate for the average listening situation. . .

"Karen was also given an otological examination by the resident otologist who reports evidence of serious otitis bilaterally. Otological consultation is recommended."

Developmental History:

K. was a battered baby who was placed in an institution at an early age. She was placed in a foster home at eight months of age. She began walking at the age of three. She was not toilet trained, was completely non-verbal, could not feed herself nor drink from a cup, tolerated no food except strained baby food. She had spent most of her time in a playpen asleep until she was three years old. At the present time she slept on the living room floor or sofa most of the day and was unable to distinguish between night and day. She did not relate to any other person and demanded nothing. She rocked on the floor on her back with her thumb in her mouth and her only response to verbal stimulation was a cessation of this activity momentarily when she was spoken to. If she was physically handled by another person, she scratched, tried to bite, and uttered gutteral sounds until she was released and could lie down again and rock.

When her foster mother picked her up to move her from one place to another, she became completely limp, not even holding up her head, and made no attempt to relate with her mother. Her mother made little attempt to talk to the child unless she was reminded to do so. The child was well cared for physically but was otherwise instimulated.

Child 3. A., male, caucasian

Birthdate: 12-16-65

Ophthalmological report of 4-66

Diagnosis: retrolental fibroplasic, "not a premature" therefore, calling it "Developmental vitreous mass, plus secondary glaucoma, O.S."

Vision: O.S. enucleated, April, 1966
O.D. light perception

Other medical problems: partial spina bifida

Audiological report of 7-21-69

"While A. made no attempt to locate a sound when presented through the test room speakers, he gave good response to the sounds, voice, music and narrow bands of noise, when presented at 20-30 db. This level is slightly outside the range of normal hearing but not greatly reduced. . .

"Routine otologic examination by the resident otologist revealed bliateral serious otitis media. This middle ear problem may account fully for the lightly reduced hearing levels noted today. It is also possible, in view of the distractible behavior, that A. is not yet able to response to very soft sounds, which he may be able to hear."

Developmental History:

A. sat up at 8 months of age and walked at 18 months. His language skills and verbal comprehension were retarded. He spoke in a baby language which his mother understood but which was incomprehensible to anyone else. His family was quite accepting and he was included in contacts with relatives, friends and neighborhood children. Very few consistent demands were made upon him, however. His behavior was retarded for a child his age. He threw objects indiscriminantly, kicked, had screaming tantrums, throwing himself to the floor, and had very short attention span. He was not controlled in these activities at home, his family seeming to feel that this was an excusable function of his blindness.

Child 4. T., Male, caucasian

Birthdate: 5-24-66

Ophthalmological report of 8-2-66

Diagnosis: Congenital cateracts (hereditary) O.U. Needled

Vision: O.U. Light Perception

Audiological report: Failed to keep appointment

Developmental History:

T. was born in a home for unwed mothers where he remained until 3/9/67 at which time he was transferred to a home for abandoned babies. In 9/68 he was transferred to a child welfare shelter where he is presently residing.

Prior to 9/68 T. screamed most of his waking hours, refused solid foods and shied away from people. Examining physicians have attributed his slow physical development, lack of muscular coordination, and inability to relate to people to retardation. However, until he was 2 years 4 months old he was crib bound and deprived of any stimulation due to the understaffed condition of the institution. During the last 8 months his physical situation was more stimulating and he was encouraged to walk, be dressed and active during the day. On 6/1/69 he was walking well, climbing, walking steps, feeding himself with a spoon any solid food and was partially toilet trained. He was still not relating to others nor verbalizing in any fashion. His screaming continued whenever he was controlled in any fashion.

Child 5. D., male, negro

Birthdate: 10-23-64

Ophthalmological report of 6-1-69

Diagnosis: Aphakia, O.U.
Rubella syndrome

Vision: 20/200 p.c.

Other medical problems: heart murmur

Audiological report of 7-17-69:

> "He learned to give a conditioned play response to pure tone signals and indicated his awareness of these signals at levels which are considered to be within normal limits. He responded to speech signals at the 12 db level which is well within normal limits and demonstrates good ability to discriminate among speech sounds. There is no evidence of a significant or handicapping reduction in hearing."

Developmental History:

D was a premature birth. His mother had measles in the second month of her pregnancy and the diagnosis of congenital cateracts was made in the child's second week. Surgery on both eyes was performed at 18 months of age. He walked at 11 months of age and started to verbalize at the same age. He fed himself, was toilet trained and in familiar surroundings his mobility was excellent. He was frequently conscious of chest pain and frequent rest periods were required. He lived in a fatherless home with his mother and four siblings in a county housing project. All the children in the home were well cared for physically. No special stimulation had been possible for D. There was no evidence of toys, books, crayons or any other intellectually stimulating materials in the home.

Child 6. J., female, caucasian

Birthdate: 9-30-63

Ophthalmological Report of 6-6-69

Diagnosis: Bilateral microphthalmos
Micro Cornea
Amblyopia

Vision: Can identify objects and colors with left eye.

Audiological report:

"She indicated her awareness of pure tones at levels of 10-20 db bilaterally for both air-conduction and bone conduction signals. These levels are within normal limits. She repeated speech signals at the 10 db level bilaterally and indicated excellent discrimination ability bilaterally. The audiologic test results on both pure tone and speech reception threshold measures are consistent in indating essentially normal hearing bilaterally."

Developmental history:

Due to a lack of stimulation, expectation and exposure during the early years, J's developmental progress had been slow. She began to verbalize at 22 months and to walk at 25 months. Previously she had been excellently cared for physically but very protected and isolated from experience outside her nursery. J's family were well educated, upper middle class attractive people who had learned to accept her handicap but in so doing had accepted unrealistic limitations for her. At home she was required to do little for herself or to assume any role as a contributing member of the family. She was viewed as a blind retarded child. At four she had been placed in a nursery school but had never become an integrated part of the class. Her speech was largely echolalic although clear.

Child 7. F., male, caucasian

Birthdate: 11-18-63

Ophthalmolical report of 6-5-69

Diagnosis: Congenital cateracts
microphthalmos
atrophied iris

Vision: can see a little, but not much

Audiological report: referred for evaluation. Previous reports indicate total deafness

Developmental history:

F. was a full term Rubella baby who was diagnosed as having cardiac, kidney, visual and auditory involvement shortly after birth. He was highly susceptible to infection and was constantly under the doctor's care and in and out of hospitals during the first few years of his life. He was followed closely by the Developmental Clinic of Children's Hospital, who worked with Miss Janet Adler of Western Psychiatric Hospital in dance therapy. This technique was used to teach him to walk at the age of 5 years 3 months. He did not tolerate any solid food, had erratic sleep habits, was frequently ill with respiratory diseases, and uncontrollable in his behavior. He was reported as "responding to stimuli" at the time of entrance into the program.

4 STAFF

The staff consisted of a coordinator, two teachers and four aides. One of the teachers (Mrs. Gloria Gayle Park) was a certified teacher of visually handicapped children with six years experience. The other teacher (Mr. Andrew Frazier) was a certified instructor of mobility and orientation with eight years experience in education of exceptional children. One aide (Miss Susan Schnell) was a certified teacher of visually handicapped with one year experience. The second aide (Miss Gail Harp) was a certified teacher of visually handicapped recently graduated from the University of Pittsburgh. The third aide (Mrs. Barbara Brown) was a certified teacher with two years experience at the Greater Pittsburgh Guild for the Blind. The fourth aide (Miss Linda Marshall) was a student at Westminster College majoring in elementary education. In addition, a certified secondary teacher (Mrs. Nancy Thompson) who was studying for a master's degree at the University of Pittsburgh in education of the visually handicapped, served as a practice teacher under the cooperation of the coordinator of the program. A cook was provided to prepare lunch for the children.

Three evaluators served for two days at the beginning and two days at the end of the program. This provided a pre- and post evaluation for the program. The evaluators were: a medical social worker from the Pennsylvania Association for the Blind (Mrs. Eunice Sieg); a pre-school specialist (Mrs. Delores Peabody); and a psychologist from the Developmental Clinic of Children's Hospital (Miss M. Oeler).

Resource people met with the parents each week. They were: Mrs. Marcella Goldberg, Executive Director of the Pittsburgh Branch of the Pennsylvania Association for the Blind; David M. Hiles, M. D. Pediatric Ophthalmologist; Dr. Ralph L. Peabody, Professor, University of Pittsburgh; Miss Pauline M. Moor,

program specialist in education, American Foundation for the Blind, Inc.; Miss Elinor H. Long, Supervisor programs for the visually handicapped, Bureau of Special Education, Department of Public Instruction, Pennsylvania; and Dr. James F. Jordan, Assistant Superintendent, Allegheny County Schools.

Two medical social workers from the Pittsburgh Branch of the Pennsylvania Association for the Blind (Mrs. Belle Kraus and Mrs. Rose Grossman) served in the beginning to identify the children and to prepare the parents for the program. They attended each parent session and served as interpreters and counselors to the parents. In addition, each one was carefully instructed about the techniques used by the teachers and will continue counselling with the parents to help them extend the training to their homes.

5 COST OF PROGRAM

The program cost $12,750.00. Staff cost was $9,275.00; transportation $330.00; contracted services $1,625.00. The balance, $1,525.00, was used for: food; instructional supplies; and evaluation, including videotape records for dissemination.

6 EVALUATION PROCEDURES

In the month previous to the training period, each child was visited in his home by the coordinator of the program. At this time the Social Maturity Scale for Blind Preschool Children (Maxfield and Buchholz, 1957) was administered. This is a report of the actual performance of the child as obtained from an adult knowledgeable about the child. In six cases the reporting was done by the mother or foster mother of the child. In the case of T. the head nurse of the institution in which he lived did the reporting. This scale was scored, not for the purpose of obtaining an S.Q. but for the purpose of delineating the precise tasks which the child was unable to perform at the age at which most blind children can perform them.

Services were contracted for three independent evaluators on the first two days of the program. Each child was assessed by them on his ability to perform the tasks outlined in the Scale of Orientation and Mobility Skills of Young Blind Children (Lord, 1967) and the Body Image of Blind Children Screening Test (Cratty, 1968). In addition, videotape recordings were made of these evaluation procedures. While these two scales were standardized for children as young as three years, the standardization sample was composed of blind children with no other handicaps. A review of the literature revealed that these scales are the only ones available for testing blind children on these skills. In the cases of J. D. and A., these scales were appropriate; however, the other four children had such enormous restrictions because of their concomitant handicaps that it proved impossible to assess their abilities to perform the tasks. The tasks outlined in the two scales depend upon the child performing upon command, and the lower four children were not only non-verbal but had little verbal comprehension. It is important to note, also that the children in the project, while considered blind children, had entirely too much vision to make all the

items appropriate. The scales proved very valuable as guides to tasks to be taught, however. The evaluators recorded their observations of the behaviors of the children who could not be formally assessed. If the children, during the observation period, displayed the ability to perform the tasks on the Lord and Cratty scales, they were given credit for them.

From these evaluations, a chart was constructed showing the level at which each child was performing. Each child was then given instruction in the tasks which they had not displayed the ability to perform.

During the last two days of the program, the three evaluators reassessed the children. The same scales were used, and, in the case of the lower four children, observational data recorded. Videotapes of this performance were also made. Charts in appendix show the gains made by the children between the pre and post evaluation.

Each day a record of the performance was recorded on a dictaphone by each teacher. There records were restricted to behavioristic reports. When a child was reported as having learned a task to a pre-arranged criterion, a date was recorded in the child's chart for that task.

Professional visitors were encouraged to record subjective impressions of the children's progress. The following quotes were taken from their letters:

> "I was most impressed with the progress which the children have made and with the involvement of parents which I am sure is a major part of any service program for these children in their preschool years. With the large number of rubella children needing assistance and parents searching for help, we could only wish that there might be more programs of this nature throughout the country. I am sure you know that you have been pioneering in this project which will certainly pay dividends to the children and their parents."
>
> ... Pauline M. Moor
> Program Specialist in Education
> American Foundation for the
> Blind, Inc.

"The teachers and aides were well selected and did an exceptional job, as was demonstrated by the progress shown by the seven children included in the program. . .

"The parents also profited by their exposure to the medical, educational, and psychosocial presentations at their meetings by outstanding leaders in those fields."

... Mrs. Marcella C. Goldberg
Executive Director
Pittsburgh Branch
Pennsylvania Association for the Blind, Inc.

"I have visited the class twice, the first time during the second week and then again today, the last week of the project. The change in each of the seven children involved is truly remarkable. Each child has learned new skills, the parents from their weekly meetings have also learned new skills and the caseworkers from this agency have derived greater understanding in their role of continuing service to each family."

... Miss Margaret F. Gnade
Director, Welfare Services
Pittsburgh Branch
Pennsylvania Association of the Blind, Inc.

"What happened to each of the seven children in the span of six short weeks would be beyond anyone's imagination if it were not documented! The Allegheny County Schools and the project staff should be proud of their accomplishments with the children, and obviously they have demonstrated unequivocably the value of intensive services for visually impaired children of preschool age, particularly those retarded in development."

... Miss Elinor H. Long, Supervisor
Programs for Visually Handicapped
Bureau of Special Education
Department of Public Instruction
Harrisburg, Pennsylvania

The parents did not put in writing their impressions of the gains which their children made, but it is significant that they have formed as a group to explore all possibilities to continue the program.

7 DISSEMINATION

An article accompanied by a picture appeared in the Superintendent's Newsletter of the Allegheny County Schools, July, 1969. The project was reported in the Pittsburgh Post-Gazette, Wednesday, July 9, 1969. Copies of these two articles are included.

Channel 2, KDKA Group W. television interviewed parents and the coordinator of the program. Pictures of the children's activities were also taped and this report appeared on TV on the evening of July 22, 1969 and also on the morning of July 23, 1969. The following is a transcribed report of the audio portion of that report:

> "Commentary: A program for preschool blind children at the Eastern Area Special School in Churchill has miraculously developed independence in visually handicapped youngsters. But in spite of its unusual success there is a possibility the program will have to end this week. Ann Jordan reports."
>
> "Ann Jordan: The federal government gave $15,000 to Allegheny County to be used in a six week demonstration program for the educational training of the exceptional child. The county chose to use those funds in a program for the visually handicapped."
>
> "Mrs. Moore: These children are all educationally blind which means that they have less than 20/200 vision in the better eye after correction as measured on a Snellen chart, which is the chart which has the large E at the top and the smaller E's going on down."
>
> "Ann Jordan: What improvements have you generally noticed in these youngsters?"
>
> "Mrs. Moore: We have noticed tremendous improvement in the youngsters. For instance, one youngster, when he came to us, was unable to tolerate solid food at all, and there really was very little that this youngster could do. We now have him feeding himself most of his dinner. We have him tolerating at least semi-solid food. The youngster works puzzles, rides a bicycle and does other nursery school types of activities."
>
> "Mrs. Manuel (a mother): Since Dale started to school he knows how to button his clothes. He knows the difference between right and left, he sees much better now than before he went to school. He learned to cross the street now and watch for cars."

"Mr. Bich (a father): There is a great value in continuing this program. Our child was deaf and blind and it seems that no school in this country wants him because of his other problems. And without a program like this he will sit at home and do nothing. At home he won't do none of these things for us."

"Ann Jordan: This program is in its final week. That will mean the end of the federal funds and the whole program as well unless in some way, additional funds may be gotten to keep it going. Ann Jordan, reporting."

A one hour video tape has been prepared showing the condition of each child when beginning the program, training procedures, and the condition of each child at the end of the program. This tape will be shown to social workers, to students at the University of Pittsburgh, and to the Pennsylvania Council for the Education of the Visually Limited Child at the Pennsylvania Federation, Council for Exceptional Children convention at Philadelphia in October, 1969. Copies are available for any other interested group.

Copies of the final report are being made available to:

The American Foundation for the Blind
The Pennsylvania Association for the Blind
The Western Pennsylvania School for Blind Children
The University of Pittsburgh
The New York Commission for Blind
The Developmental Clinic, Children's Hospital, Pittsburgh, Pa.
Dr. David Hiles, Pediatric Ophthalmologist

Copies are available to any other interested individuals or organizations.

APPENDIX

MAXFIELD-BUCHHOLZ SCALE OF SOCIAL MATURITY
FOR USE WITH PRESCHOOL BLIND CHILDREN

O-I

Item

1. Balances head
2. Grasps and holds small object which comes in contact with his hand
3. Responds to a familiar person
4. Attempts to regain lost object
5. Rolls over
6. Bangs, shakes, feels, or otherwise plays with object for a few minutes
7. Reaches for nearby objects
8. Releases object with contact
9. Occupies self unattended with one or more objects for approximately fifteen minutes
10. Shows preferences in choice of play materials
11. Pulls self to standing position assisted by adult
12. Demands personal attention
13. Shows active interest in various sounds
14. Voluntarily releases object in mid-air without touching any surface
15. "Talks," imitates speech patterns
16. Inhibits simple acts upon familiar command
17. Grasps with thumb and finger
18. Moves about on flat surface in one fashion or another
19. Sits unsupported for several minutes
20. Shows active curiosity about objects in environment

I-II

21. Cooperates in dressing
22. Makes positive response to simple command or request

23. Drinks from cup or glass which is held for him_____

24. Chews and swallows solid food_____

25. Lowers self from standing to sitting position without assistance_____

26. Pulls self to standing position_____

27. Walks sideways when holding to pen or furniture_____

28. Drinks from cup or glass, definitely attempting to hold it_____

29. Responds to music, making general body response to rhythm; may hum or sing

30. Shows definite interest in working movable parts of objects_____

31. Walks with slight physical support_____

32. Says two or more words which have definite meaning for him_____

33. Overcomes simple obstacles in the course of moving about_____

34. Takes part in parallel play with other children_____

35. Stands alone_____

36. Uses intermediary object as implement_____

37. Indicates needs or desires_____

38. Drinks from cup or glass, holding it himself_____

39. Shows definite attempt to feed self with spoon_____

40. Pulls off shoes when unfastened and not too tight, and then socks, as an act of undressing_____

II-III

41. Walks without assistance for short period of time_____

42. Touches and feels object of various textures in exploratory fashion_____

43. Walks about house or yard freely, with only occasional use of objects as guides_____

44. Uses names of familiar objects_____

45. Fetches or carries familiar objects from a person in one room to a person in another familiar room on request_____

46. Shows evidence of planfulness in arranging objects with relation to each other_____

47. Listens attentively to short, simple stories which have repetition and familiar characters_____

48. Initiates own play activities by exploring and examining objects_____
_____

49. Avoids simple hazards_____

50. Drinks from cup or glass and replaces it on table unassisted_____
_____

51. Talks in short sentences_____

52. Removes coat or simple garment_____

53. Makes definite effort to pull up or push down unfastened panties as an act of undressing or when going to the toilet_____

54. Uses basket or other receptacle for carrying small objects from one place to another_____

55. Walks upstairs without physical help_____

56. Walks upstairs unaccompanied. May hold rail_____

57. Eats with spoon, without help although with moderate spilling_____
_____

58. Asks to go to toilet_____

59. Carries out constructive activity_____

60. Puts on coat or simple garment_____

61. Relates experiences_____

62. Helps at little household tasks_____

63. Dries own hands acceptably_____

64. Uses pronouns "I," "me," and "you," with some understanding_____
_____

65. Jumps with both feet from low box or bottom step_____

66. Uses past tense and plural forms correctly_____

67. Walks downstairs one step per tread without help, placing alternate feet on successive steps_____

68. Washes hands unassisted_____

69. Plays cooperatively at preschool level_____

70. Enjoys nonsense rhymes and the humorous phase of stories. May create stories with silly language_____

IV-V

71. Takes active part in dramatic play_____

72. Separates from parent or other familiar person with little or no fussing_____

73. Cares for self at toilet_____

74. Eats with fork with only moderate spilling_____

75. Puts on coat or simple garment unassisted_____

76. Washes face unaided_____

77. Adjusts readily to group situation involving some conformity to rules_____

78. Goes about immediate neighborhood freely_____

79. Uses sled, wagon, skates or tricycle_____

80. Makes forms with some approximation to that of the intended object_____

81. Asks questions about meanings of words, how things work, and what they are for_____

82. Is spurred on in various activities by competition of other children of approximately the same age and group_____

83. Tells a long, familiar story_____

84. Unbuttons front and side buttons if not too small_____

85. Carries out extended projects, involving physical activity, which continue from one day to the next_____

V-VI

86. Tells with reasonable accuracy whether it is morning, afternoon or evening_____

87. Brushes teeth with only general supervision_____

88. Dresses self except for tying bowknots_____

89. Buttons fairly large front and side buttons_____

90. Skips, or hops on one foot_____

91. Hangs up clothes as part of dressing or undressing_____

92. Brushes and combs hair independently_____

93. Uses knife for cutting and spreading soft foods_____

94. Ties simple bowknots which remain tied_____

95. Usually differentiates between "pretending" and actual fact_____

BODY IMAGE OF BLIND CHILDREN

Screening Test

I. BODY PLANES

A. Identification of Body Planes (Child Standing)

1. Touch the top of your head. _____
2. Touch the bottom of your foot. _____
3. Touch the side of your body. _____
4. Touch the front of your body (or "stomach"). _____
5. Touch your back. _____

B. Body Planes in Relation to External, Horizontal, and Vertical Surfaces
(Child is lying/standing on a mat.)

6. Lie down on the mat so that the side of your body is touching the mat. _____
7. Now move so that your stomach or the front of your body is touching the mat. _____
8. Now move so that your back is touching the mat. _____
9. Here touch the wall with your hand, now move so that your side is touching the wall. _____
10. Here touch the wall with your hand, now move so that your back is touching the wall. _____

C. Objects in Relation to Body Planes
(Child is seated in a chair with a box.)

11. Place the box so that it touches your side. _____
12. Place the box so that it touches your front (or your stomach) _____
13. Place the box so that it touches your back. _____
14. Place the box so that it touches the top of your head. _____
15. Place the box so that it touches the bottom of your foot. _____

II. BODY PARTS

A. Body Part Identification: Simple
(Child is seated in a chair.)

16. Touch your arm. _____
17. Touch your hand. _____
18. Touch your leg. _____
19. Touch your elbow. _____
20. Touch your knee. _____

B. Parts of the Face.
(Child is seated in a chair.)

21. Touch your ear. _____
22. Touch your nose. _____
23. Touch your mouth. _____
24. Touch your eye. _____
25. Touch your cheek. _____

C. Parts of the Body: Complex (Limb Parts)
(Child is seated in a chair.)

26. Touch your wrist. _____
27. Touch your thigh. _____

28. Touch your forearm. _____
29. Touch your upper arm. _____
30. Touch your shoulder. _____

D. Parts of the Body (Hands-Fingers)
(Child is seated in a chair.)
31. "Hold up" your thumb. _____
32. "Hold up" your (first) pointer finger. _____
33. "Hold up" your little (pinkie) finger. _____
34. "Hold up" your big (middle) finger. _____
35. "Hold up" your ring finger. _____

III. BODY MOVEMENTS

A. Movements of the Body: Trunk Movement While Fixed
(Child is standing.)
36. Bend your body slowly backwards (or "away") from me . . . stop. _____
37. Bend your body slowly forward (or toward the front) toward me . . . stop. _____
38. Bend your body slowly to the side . . . stop. _____
39. Bend your knees and slowly squat down . . . stop. _____
40. Rise upon your toes . . . stop. _____

B. Gross Movements in Relation to Body Planes
(Child is standing.)
41. Walk forward toward me . . . stop. _____
42. Walk backward away from me . . . stop. _____
43. Jump up . . . stop. _____
44. Move your body to the side by stepping sideways . . . stop. _____
45. Move sideways to the other side . . . stop. _____

C. Limb Movements
(Child is standing/lying on a mat.)
While standing:
46. Bend one arm at the elbow. _____
47. Lift one arm high in the air. _____
While in a back-lying position:
48. Bend one knee. _____
49. Bend one arm. _____
50. Straighten your arm. _____

IV. LATERALITY

A. Laterality of Body: Simple Directions
(Child is seated in a chair.)
51. Touch your right knee. _____
52. Touch your left arm. _____
53. Touch your right leg. _____
54. Bend over slowly and touch your left foot. _____
55. Touch your left ear. _____

B. Laterality in Relation to Objects
(Child is seated in a chair with a box.)
56. Place the box so that it touches your right side. _____
57. Place the box so that it touches your right knee. _____

58. Hold the box in your left hand. _____
59. Bend down slowly and place the box so that it touches your right foot. _____
60. Hold the box in your right hand. _____

C. Laterality of Body: Complex Directions
(Child is seated in a chair.)
61. With your left hand touch your right hand. _____
62. With your right hand touch your left knee. _____
63. With your left hand touch your right ear. _____
64. With your right hand touch your left elbow. _____
65. With your left hand touch your right wrist. _____

V. DIRECTIONALITY

A. Directionality in Other People
(Child is standing.)
Tester is seated facing child. The child's hands are placed on the tester's body parts.
66. Tap my left shoulder. _____
67. Tap my left hand. _____
68. Tap my right side. _____
69. Tap my right ear. _____
70. Tap the left side of my neck. _____

B. The Left and Right of Objects
(Child is seated in a chair with a box.)
71. Touch the right side of the box. _____
72. Touch the left side of the box. _____
73. With your left hand touch the right side of the box. _____
74. With your right hand touch the left side of the box. _____
75. With your left hand touch the left side of the box. _____

C. Laterality of Others' Movements
(Child is standing.)
76. (Tester is seated with the child. The child's hands are placed on the tester's shoulder.)
Am I bending to my right or left? (Bend right.) _____
77. (Tester is seated with the child. Child's hands are placed on the tester's shoulder.)
Am I bending to the right or left? (Bend left.) _____
78. (Tester is seated with his back to the child. The child's hands are placed on the tester's shoulder.)
Am I bending to my right or left? (Bend left.) _____
79. (Tester is seated with his back to the child. Child's hands are placed on the tester's shoulder.)
Am I bending to my right or left? (Bend right.) _____
80. (Tester is standing with his front to child. Child stands still.)
Am I moving to my right or left? (Moves left.) _____

ORIENTATION AND MOBILITY SCALES SCORE SHEET (LORD, 1967)

Three year old level

I. SEATING SELF

_____ 1. Seats self - two contacts
_____ 2. Seats self - one contact
_____ 3. Seats self - independently (chair)
_____ 4. Seats self - independently (table)

II. FAMILIARIZATION TECHNIQUES

_____ 5. Explores with guide

IV. WALKING

_____ 6. Walks with cross pattern

V. USING DOORS AND WINDOWS

_____ 7. Identifies doors
_____ 8. Identifies windows

VII. PUTTING ON CLOTHING

_____ 9. Sweater - assistance

X. USING THE TELEPHONE

_____10. Locates the telephone

XII. AUDITORY CUES - LOCALIZATION

_____11. Localizes sound source

XIII. AUDITORY CUES - IDENTIFICATION

_____12. Identifies voices
_____13. Identifies common sounds

XVII. WALKING UP - DOWN STEPS

_____14. Up with support

XIX. RUNNING

_____15. Runs with support
_____16. Runs - one hand held

XX. JUMPING

_____17. Jumps off ground

XXI. CLIMBING

_____18. Climbs on sturdy object
_____19. Climbs object-limited support

Four year old level - additional items

III. USING TACTUAL CUES
_____20. Investigates through touch
_____21. Distinguishes surface differences
_____22. Discriminates - surfaces (objects)

IV. WALKING
_____23. Toes in direction of travel

VIII. REMOVING CLOTHING
_____24. Oxfords with assistance

IX. UNDERSTANDING TURNS
_____25. Turns opposite direction
_____26. Makes quarter turn

X. USING THE TELEPHONE
_____27. Answers telephone

XIII. AUDITORY CUES - IDENTIFICATION
_____28. Identifies sound sources

XIV. AUDITORY CUES - TRAVEL
_____29. Detects large objects

XIX. RUNNING
_____30. Runs toward person

XXI. CLIMBING
_____31. Climbs up independently
_____32. Climbs down independently

Five - Six year level - additional items

II. FAMILIARIZATION TECHNIQUES
_____33. Notes objects within reach

III. USING TACTUAL CUES
_____34. Distinguishes gross differences
_____35. Discriminates - textures (cloth)
_____36. Discriminates - textures (paper)

IV. WALKING
_____37. Weight distributed

V. USING DOORS AND WINDOWS
_____38. Demonstrates window parts

VI. USING RIGHT AND LEFT
_____39. Correctly turns left
_____40. Distinguishes R-L in environment

VII. PUTTING ON CLOTHING

_____41. Sweater - unassisted
_____42. Buttons sweater

VIII. REMOVING CLOTHING

_____43. Oxfords without assistance
_____44. Sweater without assistance
_____45. Zippered without assistance
_____46. Unbuttons front buttons

IX. UNDERSTANDING TURNS

_____47. Complete turn in place

XI. HANDLING SIMPLE TOOLS - MATERIALS

_____48. Locates tools and materials
_____49. Returns materials - tools
_____50. Identifies tools

XIV. AUDITORY CUES - TRAVEL

_____51. Uses sound cue as landmark
_____52. Uses moving sound
_____53. Uses stationary sound source

XV. USING TRAILING TECHNIQUES

_____54. Uses appropriate hand

XVI. REVERSING ROUTES

_____55. Travels straight line and reverses
_____56. Route of one turn - reverse

XVII. WALKING UP - DOWN STEPS

_____57. Up without support
_____58. Down without support
_____59. Up alternating feet

XVIII. HOPPING AND SKIPPING

_____60. Hops - one foot

XX. JUMPING

_____61. Jumps off step
_____62. Jumps off wall
_____63. Jumps coordinating movements

EVALUATORS RATINGS - GAINS DEMONSTRATED

CHILD	TEST	NO. ITEMS PRE	NO. ITEMS POST	NO. ITEMS GAIN
T.	Maxfield Buchholz	39	47	8
A.	"	56	59	3
K.	"	15	37	22
M.	"	53	56	3
J.	"	74	83	9
D.	"	79	82	3
F.	"	25	33	8
F.	Cratty	0	0	0
A.	"	0	15	15
K.	"	0	0	0
M.	"	0	7	7
J.	"	17	58	41
D.	"	26	53	27
F.	"	0	0	0
T.	Lord	7	18	11
A.	"	20	30	10
K.	"	0	2	2
M.	"	14	-	-
J.	"	17	37	20
D.	"	35	43	8
F.	"	0	0	0

. BEHAVIORAL OBSERVATIONS BY EVALUATORS - PRE AND POST TESTING

Child - T.

Pre-test

Child was non-verbal, but understood and obeyed simple commands such as "stand", "sit", "pick up". He made some sounds into a toy phone. He had good travel vision. He soon became irritable and refused any restraint.

Post-test

Child explored well, using sight, small finger muscles, sound and mouth. He enjoyed a pull toy, water play in the sink, and rhythm sounds from the phonograph. He said "cup" when playing with cup in the sink. He pulled toys apart and took articles out of a box, but would not return them to the box. He ate unassisted using spoon and fork.

BEHAVIORAL OBSERVATIONS BY EVALUATORS - PRE AND POST TESTING

Child - M.

Pre-test

Child had barely intelligible speech, but with many words meaningful to him. He had vision in his right eye and used this vision well. For instance, he was able to locate beige blocks on a beige floor with ease. He walked independently (with right side hemiparesis) and enjoyed exploring. He could locate where sounds came from.

Post-test

Child identified pictures and verbalized "horse, cow, house", and body parts of animal pictures such as "eyes, foot". He refused to identify his own similar body parts. He refused to cooperate with any verbal command. He removed puzzle pieces from a 10 piece puzzle and put them back correctly. He threaded wooden beads with little difficulty, and correctly manipulated zipper in special frame. He ate with a spoon unassisted. He was very social, greeting everyone with "hi."

BEHAVIORAL OBSERVATIONS BY EVALUATORS - PRE AND POST TESTING

Child - F.

Pre-test

Child was very excited and exploratory. He explored the tricycle, piano, ball, table and chairs, blackboard, patting or banging these things with his hands and exploring with his mouth. He grabbed the examiners glasses and pulled at her hair. He became very excited at the red light on the conditioning board control unit that was on the table, and climbed up on the table to it. He spent a long time lying on the floor with a doll, squealing and moving its arms and legs. He lay on a cot for a few seconds and then got up on his hands and knees and bounced on it. He discovered the TV monitor, squealed, and banged it with his hands. He drank from a cup.

Post-test

While child's teacher used a light stimulus as a reinforcer, child assembled a form board puzzle quickly and placed vegetable shaped pieces into a six piece puzzle. He used his residual vision well to place tiny pegs into holes on a board. If stimulated with a green light, he manipulated the green counters on a kindergarten abacus and seemed to match yellow in this same way. When a small block was thrown across the floor he followed it and retrieved it. He caught a large ball thrown to him, bounced it back, and kicked the ball on command. He stacked blocks one upon another, and stacked hollow blocks of graduated sizes one inside another with ease. He climbed steps with the assistance of the teacher, alternating feet and climbed down one foot at a time. He climbed up on a tricycle alone and held his feet on the pedals while his teacher pulled the bike.

Child F. - continued

He sat on a chair on command. He acknowledged the presence of others without squealing of pulling. He was learning to find parts of his body upon command.

He ate ice cream with a spoon, independently handling the spoon.

BEHAVIORAL OBSERVATIONS BY EVALUATORS - PRE AND POST TESTING

Child - K.

Pre-test

Child whined and cried through the whole session. She did some tactual exploration of a doll and some blocks when they were presented to her, and she crumpled a paper bag repeatedly, apparently for the noise this produced. She responded to the noises of a squeaky toy and appeared to enjoy it. She sat under a chair and scraped the chair back and forth to produce a noise. The teacher placed her in the center of the floor and she lay on her back with her thumb in her mouth and rocked from side to side. She stood up when the teacher squeaked the toy in front of her and reached out her hand for it. When the teacher led her from the room she had no apparent idea which direction she was taking. She did not respond to any verbal encouragement.

Post-test

Child sat on the floor and ate bits of cookies while the teacher used an electric vibrator applied to her legs, arms and head as a reinforcer. She looked interested and alert, with human facial responses, exploring the vibrator tactually. She removed her own shoes and socks in order to feel the vibrator with her bare feet.

Child played patty-cake and rolled ball back to the teacher upon verbal request. She followed a moving sound source to the sink, stepped up on a box and held her own hands under the faucet to wash them. She listened to a music box, holding it against her ear. She did much exploring using furniture as guides. She climbed up and sat down in a chair independently. At lunch the child held her own spoon and put it in her mouth with the assistance of her teacher.

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